

BETHESDA, MD JUNE 23-25, 2004

# Advances in Health Outcomes Measurement

## Exploring the Current State and the Future Applications of Item Response Theory, Item Banks, and Computer-Adaptive Testing

## Co-sponsored by:



National Cancer Institute



National Institutes of Health



Department of Health and Human Services



Drug Information Association

**OVERVIEW** Outcomes measurement is an integral part of assessing the effectiveness and cost effectiveness of healthcare interventions and specific treatments. This includes assessing the implications of such things as: changes in health policy, introduction of a new pharmaceutical or medical device, insurance coverage and reimbursement decisions, and community lifestyle change interventions. The techniques and methods for measuring health outcomes, particularly for patient-reported outcomes (PROs), are evolving and becoming increasingly sophisticated. This conference provides a forum for attendees to learn about the latest advances in item response theory (IRT). The benefits and limitations of IRT modeling, the application of these methods to improve PRO questionnaires, the feasibility and mechanisms for developing item banks, and the utility of computerized adaptive testing (CAT) for measuring health outcomes will be explored in detail. The major aims of the conference are to illustrate how IRT can be used to improve the science of PROs measurement related to health-related quality-of-life and health behaviors. Of special interest will be a focus on the future of health outcomes measurement, especially in regard to: the feasibility of public-domain item banks and CATs, uses in observational and clinical studies, application to clinical practice, and the role public and private entities can play in this effort. Session topics will include:

- ▶ Traditional versus modern approaches to health outcomes measurement
- ▶ Applications of IRT modeling for:
  - Building and refining outcome and behavioral science measures
  - Assessing measurement equivalence: differential item functioning (DIF)
  - Comparing or combining scores from multiple instruments: instrument linking/equating
  - Developing health outcome item banks
- ▶ Computerized adaptive testing (CAT) for health outcomes measurement
- ▶ Mapping a research agenda for health outcomes measurement in the future

**CONFERENCE LEARNING OBJECTIVES** At the conclusion of this meeting, participants should be able to:

- ▶ Discuss the benefits and limitations of the traditional and modern measurement approaches for health outcomes and behavioral science measurement
- ▶ Describe the various approaches (both IRT and non-IRT) to evaluating measurement equivalence
- ▶ Recognize the various approaches to linking two or more scales onto a common metric for either cross-walking or combining scores
- ▶ Describe and recommend the methodological steps for evaluating the psychometric properties of survey data
- ▶ Identify the critical issues involved with developing and maintaining item banks and computerized adaptive tests
- ▶ Discuss the potentials and challenges of using computerized adaptive tests in observational and clinical studies

## HEALTH OUTCOMES RESEARCH COMMITTEE

**Jakob B. Bjorner, MD, PhD**  
Deputy Chief Science Officer  
QualityMetric Inc.

**David Cella, PhD**  
Professor, Northwestern University  
Director, CORE

**Chih-Hung Chang, PhD**  
Assistant Professor  
Northwestern University

**Ron D. Hays, PhD**  
Professor, UCLA, Senior Scientist, RAND

**Colleen A. McHorney, PhD**  
Professor, Indiana University School of Medicine; Senior Scientist, Regenstrief Institute, Inc.

**Eleanor M. Perfetto, PhD, MS**  
President, Drug Information Association  
THE WEINBERG GROUP INC.

**Bryce B. Reeve, PhD**  
Psychometrician, National Cancer Institute  
*Conference Coordinator*

## BEHAVIORAL SCIENCE COMMITTEE

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Professor, Baylor College of Medicine

**Louise C. Masse, PhD**  
Psychometrician, National Cancer Institute  
*Conference Coordinator*

**Russ Pate, PhD**  
Professor, University of South Carolina

**Ken Resnicow, PhD**  
Professor, University of Michigan

## See page 2 for

- ▶ **Poster abstract submission guidelines**
- ▶ **Continuing education information and**
- ▶ **TUTORIAL:**  
**Item Response Theory (IRT) and Applications of IRT for Improving Health Outcomes Measurement**

## TUTORIAL

### Item Response Theory (IRT) and Applications of IRT for Improving Health Outcomes Measurement

June 23, 2004, 1:00-5:00 pm

#### INSTRUCTOR

**Steven P. Reise, PhD**, Professor of Measurement and Psychometrics, UCLA

This introductory workshop will begin with a discussion of the basics of item response theory (IRT) modeling which includes discussions of defining model parameters, model assumptions, item and test characteristic and information curves, frequently used IRT models, and differences between traditional and IRT methods. The course will discuss the role of IRT modeling in evaluating and developing questionnaires, identifying differential item functioning, linking instruments, and developing item banks. Examples from health outcomes research will be used throughout the workshop. This tutorial is for conference attendees who need entry-level training on IRT.

#### TUTORIAL LEARNING OBJECTIVES

At the conclusion of this tutorial, participants should be able to:

- ▶ Describe the advantages of using item response theory modeling over classical test theory methods to evaluate and develop tailored instruments
- ▶ Interpret IRT characteristic and information functions
- ▶ Discuss how patient reported outcomes measurement will benefit from the various applications of IRT modeling

*Please indicate on the registration form if you plan to attend this optional tutorial.*

- ▶ For preliminary content and related information, please visit the NCI conference website.

<http://www.outcomes.cancer.gov/conference/irt>

- ▶ To register for the conference online, visit the DIA website.

*Complete conference agenda will be available soon.*

<http://www.diahome.org>

## TARGET AUDIENCE This program will benefit

- ▶ Health outcomes researchers
- ▶ QOL researchers
- ▶ Psychometricians
- ▶ Survey developers
- ▶ Clinicians
- ▶ Market researchers
- ▶ Health behavior scientists
- ▶ Behavioral nutritionists or kinesiologists
- ▶ Health promotion researchers
- ▶ Healthcare professionals
- ▶ Pharmaceutical industry
- ▶ Regulatory affairs professionals

### Poster Abstract Submission Guidelines

- ▶ Please email all poster presentation abstracts, comments or questions to **Cherese.Verdi@diahome.org**  
*Attention: NCI/DIA 2004 Poster Presentation Submission*
- ▶ Deadline to submit poster presentation abstracts:  
**January 30, 2004.**
- ▶ Preference will be given to submitted poster abstracts that address:
  - Any application of IRT modeling in health outcomes or health behavioral research
  - Any demonstration of assessing PROs using CAT-based technology
- ▶ Please include the poster abstract author's name, degrees, affiliation, address, phone, fax and e-mail.
- ▶ Abstracts are limited to 300 words, not exceeding one page. Poster boards are four feet high and eight feet wide (4' x 8').
- ▶ Abstracts may not refer to specific brand names.
- ▶ If an abstract is accepted, the author or the author's designee must pay the appropriate registration fee and attend the conference in order to present the poster.

**Accreditation and Credit Designation:** The Drug Information Association is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. The Drug Information Association designates this educational activity for a maximum of 17 category 1 credits toward the AMA Physician's Recognition Award. Each physician should only claim those credits that he/she actually spent in the activity.



The Drug Information Association is accredited by the American Council on Pharmaceutical Education as a Provider of continuing pharmaceutical education. Participants may earn up to 17 contact hours or 1.7 continuing education units (CEU's) for completing the program and tutorial. Pharmacists will be required to complete a program evaluation form. Statements of credit will be mailed to participants within one month of program completion.



The Drug Information Association (DIA) has been reviewed and approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 1620 I Street, NW, Suite 615, Washington, DC 20006. The DIA has awarded up to 1.8 continuing education units (CEUs) to participants who successfully complete this program and tutorial. To receive a credit certificate, participants must attend the program and/or tutorial, and complete the CE Request and Evaluation Forms and return them to DIA.

**Disclosure Policy:** It is Drug Information Association policy that all faculty participating in continuing education activities must disclose to the program audience (1) any real or apparent conflict(s) of interest related to the content of their presentation and (2) discussions of unlabeled or unapproved uses of drugs or medical devices. Faculty disclosure will be included in the course materials.

## CONTINUING EDUCATION CREDIT ALLOCATION

**Tutorial:** 286-999-04-013-L04; 3.5 category 1 credits/contact hours (.35 CEUs); .4 IACET CEUs

**Conference:** 286-999-04-012-L04; 13.5 category 1 credits/contact hours (1.35 CEUs); 1.4 IACET CEUs

Statements made by speakers are their own opinion and not necessarily that of the organization they represent, or that of the Drug Information Association. Speakers and agenda are subject to change without notice. Audio/visual taping of any DIA workshop is prohibited without prior written consent from DIA.

## DRUG INFORMATION ASSOCIATION <http://www.diahome.org>

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**Tokyo, Japan**  
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email: diajapan@gol.com

### TRAVEL AND HOTEL

The most convenient airport is Ronald Reagan National Airport and attendees should make airline reservations as early as possible to ensure availability. The Hyatt Regency Bethesda is holding a block of rooms at the reduced rate below until June 2, 2004, for the DIA meeting attendees.

<b>Reduced Rate:</b>	<b>Single \$200</b>	<b>Double \$225</b>
<b>Government Rate:</b>	<b>Single \$150</b>	<b>Double \$175</b>

To reserve your room, please contact the Hyatt Regency Bethesda by telephone at +1-301-657-1234 or +1-800-233-1234, and mention the DIA meeting. The Hyatt Regency Bethesda is located at One Bethesda Center, Bethesda, MD 20814, USA.

### CONTACT INFORMATION

For meeting information, contact Chere Verdi, Meeting Manager at the DIA office in Horsham, PA by telephone +1-215-442-6131, fax +1-215-442-6199 or email Chere.Verdi@diahome.org.

**CANCELLATION POLICY:** On or before **JUNE 17, 2004** Administrative fee that will be withheld from refund amount: Member/Nonmember = \$200 Gov't/Academia (Member/Nonmember) = \$100 Cancellations must be in writing and be received by the cancellation date above. Registrants who do not cancel by that date and do not attend will be responsible for the full registration fee paid. Registrants are responsible for cancelling their own hotel and airline reservations. You may transfer your registration to a colleague at any time. Please notify DIA of any such substitutions as soon as possible. Substitute registrants will be responsible for nonmember fee, if applicable. DIA reserves the right to alter the venue, if necessary. If an event is cancelled, DIA is not responsible for any airfare, hotel or other costs incurred by registrants.

### PLEASE CONSIDER THIS FORM AN INVOICE

#### Advances in Health Outcomes Measurement

Meeting I.D. # 04015 – June 23-25, 2004

Hyatt Regency, Bethesda, MD, USA

#### Registration Fees: Please check all applicable fees.

Registration fee includes refreshment breaks, luncheons and reception and will be accepted by mail, fax, or email.

Industry	US \$ 800	<input type="checkbox"/>
Government & Academia (Full-Time)	US \$ 250	<input type="checkbox"/>
Student	US \$ 150	<input type="checkbox"/>
Optional Tutorial, June 23	US \$ 210	<input type="checkbox"/>

Join DIA now to qualify for a full year of member benefits!

**Membership** [www.diahome.org/docs/Membership](http://www.diahome.org/docs/Membership) US \$ 100 ☐

#### Please check the applicable category below:

☐ Academia ☐ Gov't ☐ Industry ☐ CSO ☐ Student

#### PAYMENT METHODS (Please check payment method):

☐ **CHECK** drawn on a US bank payable to and mailed along with this form to: Drug Information Association Inc, P.O. Box 827192, Philadelphia, PA, USA 19182-7192. Please include a copy of this registration form to facilitate identification of attendee.

☐ **BANK TRANSFER** in the currency of your choice to: PNC Bank, 1600 Market Street, Philadelphia, PA 19103, USA. DIA Account # 8606072742. ABA # 031000053. SWIFTCODE # PNCCUS33. Your name and company, as well as the above meeting I.D. number, must be included on the transfer document to ensure payment to your account.

☐ **CREDIT CARD** number may be faxed to: +1 215 442 6199. You may prefer to pay by check or bank transfer since non-U.S. credit card payment will be subject to the currency conversion rate at the time of the charge.

☐ Visa ☐ MC ☐ AMEX Exp Date \_\_\_\_\_

# \_\_\_\_\_

Signature \_\_\_\_\_

### GROUP DISCOUNTS AVAILABLE

Register 3 individuals from the same company location and receive complimentary registration for a 4th! All 4 individuals must register and prepay at the same time. DIA will apply the value of the lowest applicable fee to this complimentary registration; it does NOT include fees for optional events or DIA membership. You may substitute enrolled delegates of similar membership status at any time.

**Group registration is not available online.** To take advantage of this offer, please make a copy of this registration form for EACH of the four registrants from your company location and return them together to DIA.

☐ Please indicate that this form is part of a group registration by checking this box.

Please list below the names of the other three registrants from your company location.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**Please detach the mailing label and affix below.**

Last Name First Name Middle Initial

Degrees ☐ Dr. ☐ Mr. ☐ Ms.

Job Title

Affiliation (Company)

Address

City State Zip Country  
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\*Telephone Number \*Fax Number

\*(A Telephone and Fax Number are required for faxed confirmation.)